STATUS UPDATE AND FUTURE PLANNING FOR THE ESGF USER INTERFACE, SEARCH, AND DASHBOARD WORKING GROUP

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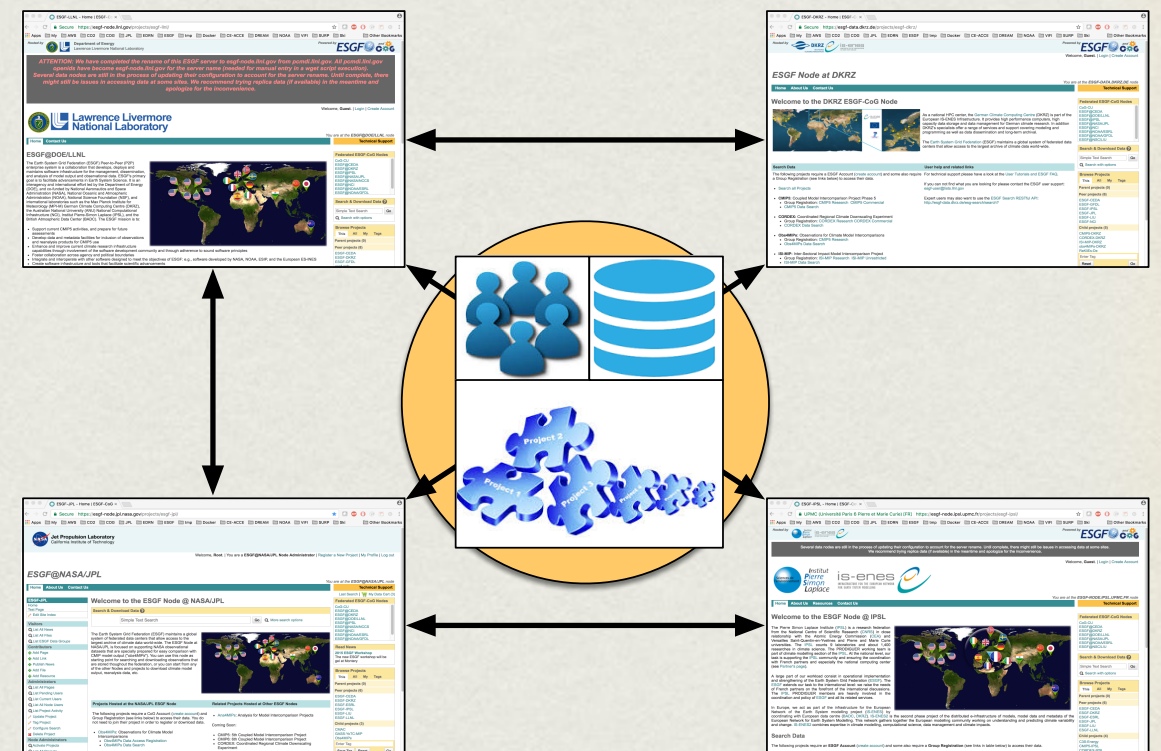*ESGF F2F Workshop, San Francisco (CA), December 2017*

OUTLINE

- ESGF User Interface (CoG)

- ESGF Search Services

- ESGF Dashboard

Note: the current working group is the result of consolidating 3 previously separate working groups into one because their functionality is strictly related

COG OVERVIEW

- CoG is the front-end User Interface to the data services deployed onto an ESGF Node

- Each ESGF Node has its own CoG web portal:

  - customized content

  - specific data collections

  - registered users

- All CoG web portals in ESGF are federated:

  - Single Sign On for users

  - Shared projects

  - Federated search and data access

COG FY17 PROGRESS REPORT

CoG development has become a collaborative effort across several ESGF institutions:

- Usability improvement as identified by community survey (Luca Cinquini)

- Integration of CMIP6 data services such as Errata, PIDs,... (Katharina Berger)

- Configuration and consistency of searches across the federation (Guillaume Levavasseur)

- Development of UI for distributed server-side computing (Jason Boutte, in branch)

- Support for OAuth authentication (Lukasz Lacinski, in branch)

- Integration with Visus data streaming (Sasha Ames)

- Prototype work of integration with NASA-DAAC observations (Robert Ferraro et al.)

- Support for Obs4MIPs quality indicators (Duane Waliser, Robert Glecker, Luca Cinquini)

- Other bug fixes and improvements
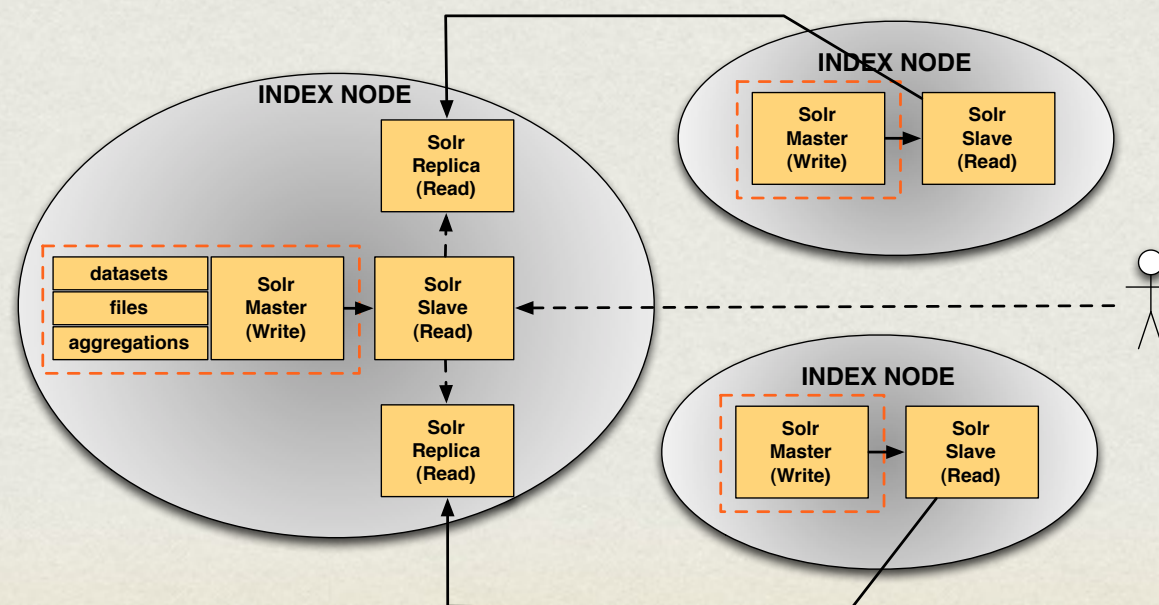
COG FY18 ROADMAP

- Support CMIP6 data management and access

  - configuration changes to search UI

  - test integration with CMIP6 services

- Merge support for OAuth authentication

- Merge User Interface for distributed server-side computing

- Start working on design and implementation of next generation UI: the Composable GUIs or "CoGs"

COMPOSABLE GUIS ("COGS")

- CoG has evolved into a very large code basis, including lots of functionality, and using libraries that are now out-dated

- We plan to refactor the current CoG into a more modular framework:

  - Multiple modules, each providing a specific functionality (user management, search, wiki, governance, computing)

  - Allow each site to choose which modules to deploy

  - Will make it easier to add new modules/functionality in the future

- Replace the current wiki editor

- Upgrade the JavaScript libraries from YUI 2.X to Node.js

- Develop a comprehensive test suite

- Strategy: gradual upgrade/modularization of current code base, not a rewriting from scratch

SEARCH SERVICES OVERVIEW

- ESGF features a state-of-the-art distributed search based on Apache Solr, including advanced features as distributed searches and replication

- Metadata are stored on separate catalogs at multiple sites, yet a search initiated at any site is able to find results throughout the federation

- Each site runs at least 2 Solr instances: one master Solr to publish metadata ("write") and one slave Solr to search ("read")

- Optionally, a site can choose to replicate some or all of the remote catalogs to improve search performance

SEARCH SERVICES FY17 PROGRESS REPORT

The Search Services have been stable for some time now and most of the work in FY2017 has ben about maintenance and small bug fixes (thanks also to Katharina Berger and Alan Iwi):

- upgrade to latest 5.+ Solr version to remedy security vulnerabilities

- fix bug in hervesting geospatial information

- order files by ID in search results

- more leniency for bad values in coordinate limits

- do not create facets for geo and geo-units

- allow geospatial limits to be expressed in meters

- enable un-publishing master and replica separately from the same index node

SEARCH SERVICES FY18 ROADMAP

- Support CMIP6 data publishing and searching

  - Develop APIs and scripts for updating the metadata in the Solr catalogs without having to republish all the data (example: transition from "project" to "activity_id")

  - Propagate these changes to the CoG UI

- Support progressive updates to the latest Solr versions, including catalog migration

- Design and implement a more performant and scalable search based on Solr Cloud

- Enable Cloud deployment based on Docker images for ESGF-Solr and ESGF Search web application

DISCUSSION